

## TAXONOMIC STUDY ON THE GENUS *LAMBERTIODES* DIAKONOFF (LEPIDOPTERA: TORTRICIDAE), WITH DESCRIPTION OF A NEW SPECIES FROM CHINA<sup>1</sup>

Xinpu Wang<sup>2,3</sup> and Houhun Li<sup>2</sup>

**ABSTRACT:** The genus *Lambertiodes* Diakonoff is reviewed, with *Lambertiodes multipunctata* sp. nov. described as new to science. The adult and genital structures of the new species are illustrated, and keys to distinguish the two known species of *Lambertiodes* are provided.

**KEY WORDS:** Lepidoptera, Tortricidae, *Lambertiodes*, new species, China

*Lambertiodes* is a monotypic genus in the tribe Sparganothini. It was proposed by Diakonoff in 1959 to include *Epagoge harmonia* Meyrick. To date, the genus contains only the type species, which is distributed in China, Burma, Thailand, India and Nepal (Meyrick, 1908, 1913; Clarke, 1958; Diakonoff, 1959, 1976; Horak, 1991, 1998; Tuck, 1995; Liu and Li, 2002; Brown, 2005).

The tribe Sparganothini is widely distributed and diverse in the Nearctic Region, but has limited distribution in the Palaearctic Region. Razowski (1993) recognized only five Palaearctic species of the genus *Sparganothis*. *Lambertiodes* is another genus of Sparganothini occurring in the Oriental Region. Based on the known distribution, we think that *Lambertiodes* might be confined to the Oriental Region.

In this paper, we describe one species, *Lambertiodes multipunctata* sp. nov. and distinguish it from *L. harmonia* (Meyrick). All the studied specimens, including the type series, are deposited in the Insect Collection, College of Life Sciences, Nankai University, Tianjin, China.

### *Lambertiodes* Diakonoff, 1959

*Lambertiodes* Diakonoff, 1959, Ark. Zool., 12(13): 166.

Type Species: *Epagoge harmonia* Meyrick, 1908, by monotype.

Head with appressed scales, a long pointed tuft projecting over forehead. Ocellus posterior. Labial palpus in male long, more than 2.5 times length of diameter of compound eye. Forewing with vein  $R_1$  arising from middle of cell, strongly bent in middle; veins  $R_4$  and  $R_5$  long stalked to 1/3 length,  $R_3$  from beyond middle of distance between  $R_{4+5}$  and  $R_2$ ,  $Cu_1$ - $M_2$  rather remote, CuP present but not developed. Hindwing without cubital pecten,  $Cu_1$  and  $M_3$  conate from angle,  $M_2$  closely approximate at base.

<sup>1</sup> Received on September 14, 2006. Accepted on May 18, 2007.

<sup>2</sup> College of Life Sciences, Nankai University, Tianjin 300071, China. E-mail: lihouhun@nankai.edu.cn. To whom correspondence and reprint requests should be addressed.

<sup>3</sup> College of Agriculture, Ningxia University, Yinchuan 750021, China. E-mail: wangxinp@eyou.com.

Male genitalia. Uncus long and slender, curved down. Socius usually longer than length of tegumen, densely setose. Gnathos arm slender, fused with socius. Transtilla spinose along upper edge. Valva simple.

Female genitalia. Sterigma with length half width of SVIII. Antrum with internal sclerites. Signum present.

Biology unknown.

**Key to species of the genus *Lambertiodes* based on the external characters**

1. Forewing with 25-30 dark brown dots throughout and a large spot at middle, without median fascia . . . . . *L. multipunctata* sp. nov.
- Forewing with 8-12 dark brown dots, without large spot at middle, with a distinct but short median fascia . . . . . *L. harmonia* (Meyrick)

**Key to species of the genus *Lambertiodes* based on the genital characters**

1. Uncus slender, nearly as long as socius; socius distinctly narrowed apically; aedeagus slender, with a small subapical tooth dorsally . . . . . *L. harmonia* (Meyrick)
- Uncus stout, shorter than socius; socius thick, without distinctly narrowed part; aedeagus stout, without subapical tooth . . . . . *L. multipunctata* sp. nov.

***Lambertiodes multipunctata* sp. nov.**

**Type Material.** Holotype ♂, China, Mêdog County (29°13'N, 95°18'E), Tibet, alt. 2380 m, 9. Aug. 2003, leg. WANG Xinpu and XUE Huaijun. Paratypes 2 ♂♂, 1 ♀, same data as holotype.

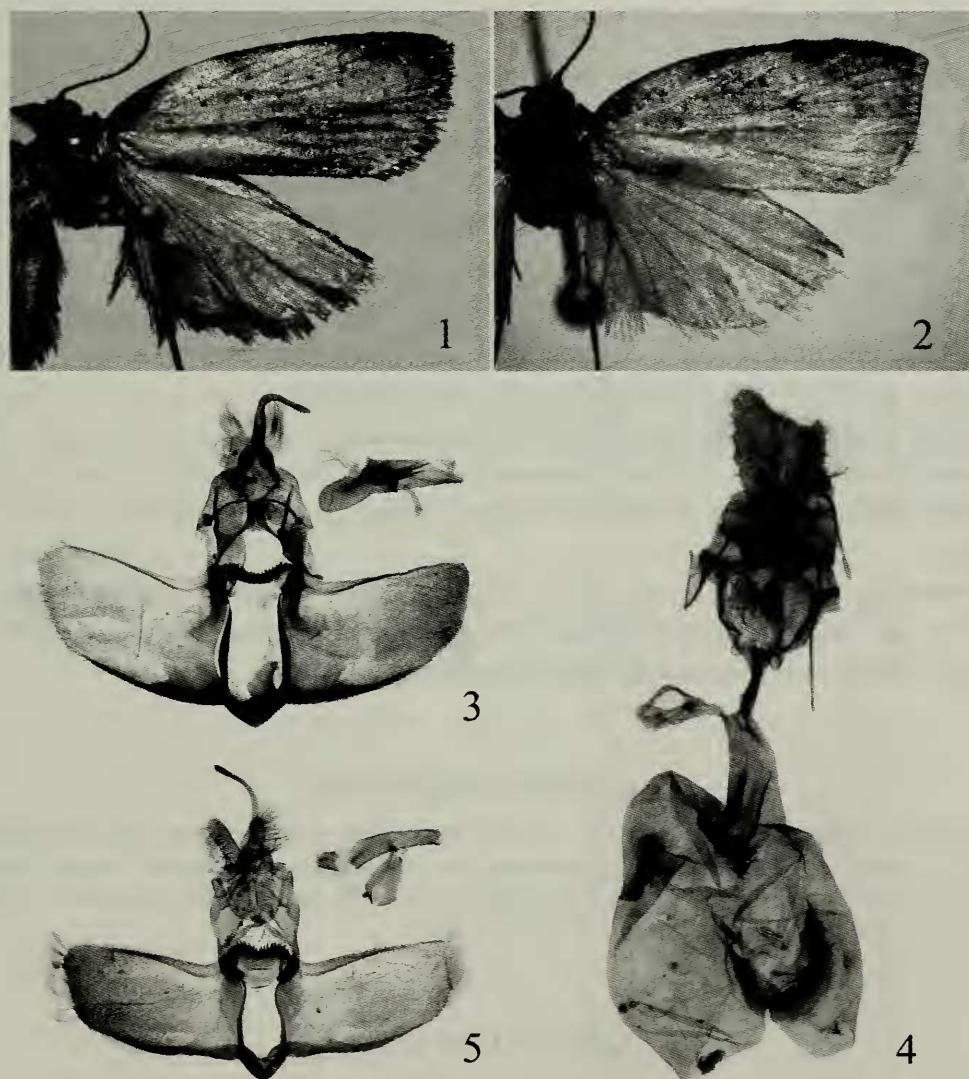
**Description.** Adult (Fig. 1): Wingspan 27.5-29.5 mm in male, 31.5 mm in female. Labial palpus about 2.5 times as long as diameter of compound eye; first segment short, yellowish brown; second segment long, curved upward, dilated apically, rust brown; third segment short, porrect, dark brown. Frons and vertex with erect and rough yellowish brown scales. Antenna thick, ciliate, dark brown. Tegula brown basally, yellowish brown distally. Thorax yellowish brown, mixed with some rusty brown scales. Forewing broad, expanded distally; costal margin arched slightly; apex blunt; termen almost straight, sinuate slightly beyond apex; tornus broad. Forewing with ground color pale yellow, with 25-30 scattered dark brown dots; costal margin dark brown in basal 1/4, with a yellowish brown blotch at middle; a large yellowish brown blotch extending from costal 2/3 almost to apex, stretching nearly to middle of termen; a large dot at middle, mixed with yellowish brown and pale brown scales; some yellowish brown scales along basal portion of dorsum; cilia yellowish brown. Hindwing pale gray, slightly yellowish at apex; cilia darker than ground colour. Legs yellowish brown, with some dark brown scales. Abdomen slender, gray dorsally, pale yellowish ventrally.

Male genitalia (Fig. 3): Tegumen about 4/5 length of socius. Uncus stout, curved, with a few bristles apically, expanded basally. Socius long and thick, without distinctly narrowed part, covered with dense long hairs. Gnathos thin and short. Transtilla half as long as width, sclerotized dorsally, densely with long

and short spinules along upper edge. Valva broad, more or less narrowed distally, costa developed basally. Sacculus short and narrow. Aedeagus stout, somewhat curved, smooth and narrowed subapically, with 8-9 spinose cornuti. Juxta broad, coecum penis developed, caulis slender.

Female genitalia (Fig. 4): Papilla analis with length 3 times width. Posterior apophysis with broad basal plate. Lateral portion of sterigma spinulate. Antrum short and broad, with two internal sclerites. Ductus bursae membranous; ductus seminalis arising from near middle. Corpus bursae ovoid; signum a U-shaped sclerite.

**Diagnosis.** The new species is similar to *L. harmonia* (Meyrick) in appearance and male genitalia, but can be separated from the latter by the forewing with 25-30 dark brown dots and a large spot at middle, but lacking median fascia; the uncus shorter than socius, the socius without distinctly narrowed part, and the aedeagus smooth and narrowed subapically.



Figs. 1-5. *Lambertiodes* spp. Figs. 1, 3, and 4: *L. multipunctata* sp. nov. 1. Adult, holotype. 3. Male genitalia, holotype. 4. Female genitalia, paratype. Figs. 2 and 5: *L. harmonia* (Meyrick). 2. Adult. 5. Male genitalia.

**Biology.** Unknown.

**Etymology.** The new specific name is derived from the Latin prefix multi- = numerous and word punctatus = punctate, referring to forewing having many dark brown dots.

**Remarks.** There are two small “sclerites” inside the corpus bursae posteriorly. The “sclerites” cannot be removed with pin when making genital slide. They might represent two signa, but further study is needed for confirmation.

### *Lambertiodes harmonia* (Meyrick, 1908)

*Epagoge harmonia* Meyrick, 1908, J. Bombay Nat. Hist. Soc. 18: 617.

*Capua harmonia* (Meyrick): Obraztsov, 1954, Tijdschrift voor Entomologie 97: 154; Clarke, 1958, Catalogue of the Type Specimens of Microlepidoptera in the British Museum described by Edward Meyrick 3: 68, pl. 34, figs. 4-4b; Liu and Li, 2002, Fauna Sinica, 27: 141, pl. XVIII-179a, b, LXVII-179, CX-179.

*Lambertiodes harmonia* (Meyrick): Diakonoff, 1959, Ark. Zool. 12(13): 167, fig. 1, pl. I, figs. 1-3; Diakonoff, 1976, Zool. Verh., 144: 69; Tuck, 1995, Microlepid. Thailand 3: 89; Brown, 2005, World Catalogue of Insects 5: 398.

**Materials Examined.** China: 2 ♂♂, Bomi County (29°53'N, 95°45'E), Tibet, alt. 2800 m, 2003-VIII-19, leg. WANG Xinpu and XUE Huaijun; 1 ♂, Mêdog County (29°13'N, 95°18'E), Tibet, alt. 1200 m, 2003-VIII-10, leg. WANG Xinpu and XUE Huaijun; 2 ♂♂, Xiaoheishan, Longling County (24°35'N, 98°41'E), Yunnan, alt. 2300 m, 2005-VIII-10, leg. Ren Yingdang.

Adult (Fig. 2). Wingspan: 21.0-23.0 mm in male.

Male genitalia (Fig. 5): As illustrated.

**Distribution.** China (Sichuan, Yunnan, Tibet), Burma, Thailand, India, and Nepal.

**Remarks.** This species can be distinguished easily from *L. multipunctata* sp. nov. by the forewing with a distinct but short median fascia, the uncus nearly as long as socius, smooth and distinctly narrowed apically.

### ACKNOWLEDGEMENTS

We wish to express our thanks to Mr. K. Tuck (The Natural History Museum, London) for providing us with helpful references. The research was supported by the National Natural Science Foundation of China (30660151), the Fok Ying Tung Educational Foundation (101022), and the Natural Science Foundation of Ningxia, China (NZ 0518).

### LITERATURE CITED

**Brown, J. W.** 2005. Tortricidae (Lepidoptera). In, World Catalogue of Insects 5. Apollo Books. Stenstrup, Denmark. 741 pp.

**Clarke, J. F. G.** 1958. Catalogue of the type specimens of Microlepidoptera in the British Museum

(Natural History) described by Edward Meyrick. Trustees of the British Museum (Natural History). London, England, U.K. 3: 600 pp.

**Diakonoff, A.** 1959. Entomological results from the Swedish expedition 1934 to Burma and British India, Lepidoptera collected by René Malasie Microlepid. II. *Arkiv för Zoologi* 12(13): 165-182.

**Diakonoff, A.** 1976. Tortricidae from Nepal 2. *Zoologische Verhandelingen* 144: 1-145.

**Horak, M.** 1984. Assessment of taxonomically significant structures in Tortricinae (Lepidoptera: Tortricidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 57(1): 3-64.

**Horak, M.** 1998. The Tortricoidea (Lepidoptera). *Handbuch der Zoologie* 4(35): 199-215.

**Horak, M. and R. L. Brown.** 1991. Taxonomy and Phylogeny. 23-48. In, L. P. S. van der Geest and H. H. Evenhuis (Editors). *World Crop Pest 5: Tortricid Pest, Their Biology, Natural Enemies and Control*. Elsevier Science Publishers. Amsterdam, The Netherlands.

**Liu, Y. Q. and G. W. Li.** 2002. Lepidoptera Tortricidae. *Fauna Sinica, Insecta* 27. Science Press, Beijing, China. 463 pp.

**Meyrick, E.** 1908. Descriptions of Indian Micro-Lepidoptera. *The Journal of the Bombay Natural History Society* 18: 613-638.

**Meyrick, E.** 1913. Fam. Tortricidae In, P. Wytsman, *Genera Insectorum, Lepidoptera Heterocera*. Bruxelles, Belgium. 81 pp, 5 plates.

**Obraztsov, N. S.** 1954. Die Gattungen der Palaearktischen Tortricidae. I. Allgemeine Aufteilung der Familie und die Unterfamilien Tortricinae und Sparganothinae. *Tijdschrift voor Entomologia* 97: 141-231.

**Razowski, J.** 1993. The catalogue of the species of Tortricidae (Lepidoptera). Part II: Palaearctics, Sparganothini, Euliini, Ramapesiini and Archipini. *Acta Zoologica Cracoviensia* 35(3): 665-703.

**Tuck, K. R.** 1995. A checklist of described species of Chlidanotinae and Tortricinae (Lepidoptera: Tortricidae) of Thailand, with description of a new species of *Ancyroclepsis* Diakonoff. *Microlepidoptera of Thailand* 3: 87-92.